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| 09/490,173 | 01/22/2000 | John P. Carrico | 2493-025 | 6828 |

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Roberts Abokhair & Mardula L L C
11800 Sunrise Valley Drive
Suite 1000
Reston, VA 20191-5302

EXAMINER

FERRIS III, FRED O

| ART UNIT | PAPER NUMBER |
|----------|--------------|
|----------|--------------|

2128

DATE MAILED: 04/19/2004

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/490,173

Applicant(s)

CARRICO ET AL.

Examiner

Fred Ferris

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892).
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *RFI 1.105*.

DETAILED ACTION

Requirement for Information - 37 C.F.R. § 1.105

1. Applicants and assignee are required under 37 CFR 1.105 to provide the following information that the examiner has determined is reasonably necessary to the examination of this application:

- the title, citation and copy of each publication that any of the applicants relied upon to draft the claimed subject matter (See MPEP section 704.14).
- Specifically, the publication related to "prior art GUI" listed in the specification on page 2, line 7, and disclosed in applicants amendment (paper #4, page 25, line 15) titled: "Swingby program", (manuals and related publications)

Computer Sciences Corp. 1989

Applicants rely on "Swingby program" (prior art GUI) for essential matter, and are claiming limitations relating to "running simulations for each of the established profiles to provide a result representing a solution to the problem". Page 2, line 7, of the specification and applicant's amendment (paper #4, page 25, line 15) references the "Swingby program" (prior art GUI) as providing the "automatic processing within the GUI" and therefore relies on essential matter contained in the publication for enablement of the claims.

2. For the reasons provided, the documents are considered especially relevant to the instant application and are required by the Examiner for consideration. The indicated materials are considered very relevant therefore the applicant is required to provide the office with copies of the indicated references for consideration. The Examiner requires the documents because the Examiner needs to consider them in so far as they are ***material to the patentability of the application as per 37 C.F.R. 1.56.***

3. The information is required to enter in the record the art suggested by the Requester of the Examination as relevant to this examination in the specification:

- ***“Swingby program”, (manuals and related publications) Computer Sciences Corp. 1989 (specification: page 2, line 7, and amendment: paper #4, page 25, line 15)***

4. In response to this requirement, please provide the title, citation and copy of each publication that any of the applicants relied upon to draft the claimed subject matter. For each publication, please provide a concise explanation of the reliance placed on that publication in distinguishing the claimed subject matter from the prior art.

5. The fee and certification requirements of 37 CFR 1.97 are waived for those documents submitted in reply to this requirement. This waiver extends only to those documents within the scope of this requirement under 37 CFR 1.105 that are included in the applicant's first complete communication responding to this requirement. Any supplemental replies subsequent to the first communication responding to this requirement and any information disclosures beyond the scope of this requirement under 37 CFR 1.105 are subject to the fee and certification requirements of 37 CFR 1.97.

6. The applicant is reminded that the reply to this requirement must be made with candor and good faith under 37 CFR 1.56. Where the applicant does not have or cannot readily obtain an item of required information, a statement that the item is unknown or cannot be readily obtained will be accepted as a complete reply to the requirement for that item. Applicants are reminded that they have referred to the

material in the specification and have relied upon the material in a declaration in order to attempt to traverse 112(1) rejections.

7. This requirement is an attachment of the enclosed Office action. A complete reply to the enclosed Office action must include a complete reply to this requirement. The time period for reply to this requirement coincides with the time period for reply to the enclosed Office action.

8. This requirement is subject to the provisions of 37 CFR 1.134, 1.135 and 1.136 and has a shortened statutory period of 2 months. EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136(a).

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to:

Examiner Fred Ferris telephone number (703) 305-9670, Monday-Friday 0830 to 0500 ET, **or** the examiner's supervisor, Kevin Teska, telephone number (703) 305-9704. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, telephone number (703) 305-3900.

mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9306
Fred Ferris
Patent Examiner

A handwritten signature in black ink, appearing to read 'Fred Ferris', is located on the right side of the page. The signature is written in a cursive, flowing style.

DETAILED ACTION

1. *Claims 1-9 have been presented for examination based on applicant's amendment filed 26 February 2004 (paper # 4). Claims 1-9 remain rejected by the examiner.*

Response to Arguments

2. *Applicant's arguments filed 26 February 2004 (paper # 4) have been fully considered but they are not persuasive.*

Regarding applicant's response to IDS references: While applicant's amendment has sufficiently addressed the issues relating to AGI's STK Astrogator module, the issues relating to the prior art GUI, which applicants now indicate relates to the Swingby program, have not been resolved. Applicants argue that the Swingby program is not a patent or publication suitable for submission in an IDS. The examiner asserts that since, as admitted by applicants, the Swingby program has been incorporated into the Astrogator module, and since it is obviously a product that has demonstrated commercial success, some type of User's Manual or related document obviously exists for the Swingby product that would be suitable for submission in an IDS. Any User's Manuals, tutorials or related Swingby documents are considered printed publications. See MPEP section 2128 ("Printed Publications" as Prior Art) which recites:

"ELECTRONIC PUBLICATIONS AS PRIOR ART

Status as a "Printed Publication"
An electronic publication, including an on-line database or Internet publication, is considered to be a "printed publication" within the meaning of 35 U.S.C. 102(a) and (b) provided the publication was accessible to persons concerned with the art to which the document relates. See In re Wyer, 655 F.2d 221, 227,

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210 USPQ 790, 795 (CCPA 1981) ("Accordingly, whether information is printed, handwritten, or on microfilm or a magnetic disc or tape, etc., the one who wishes to characterize the information, in whatever form it may be, as a printed publication should produce sufficient proof of its dissemination or that it has otherwise been available and accessible to persons concerned with the art to which the document relates and thus most likely to avail themselves of its contents." (citations omitted)). See also Amazon.com v. Barnesandnoble.com, 73 F. Supp. 2d 1228, 53 USPQ2d 1115, 1119 (W.D. Wash. 1999) (Pages from a website were relied on by defendants as an anticipatory reference (to no avail), however status of the reference as prior art was not challenged.); In re Epstein, 32 F.3d 1559, 31 USPQ2d 1817 (Fed. Cir. 1994) (Database printouts of abstracts which were not themselves prior art publications were properly relied as providing evidence that the software products referenced therein were "first installed" or "released" more than one year prior to applicant's filing date.)."

The examiner therefor maintains that the Prior Art GUI reference is an improper attempt to incorporate by reference and that related Swingby publications containing essential material and information critical to the operation of the claimed invention have not been disclosed. (Please see attached 1.105 requirement)

Regarding applicant's response to 112(1) rejection: Applicants have argued that the specification provides enablement relating to limitations such as, "selecting components", "defining results", specifying goal elements", and modifying profiles, and have referenced specification pages 6-8 and Figures 1-4 as providing the required enablement. With regard to these specific limitations, which are merely drawn to defining, specifying, and modifying mission parameters, the examiner concurs.

However, the examiner has reviewed the amended specification and has not found enabling support for the limitations relating to "running simulations for each of the established profiles to provide a result representing a solution to the problem" as

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recited in independent claims 1, 4, and 7. Applicant's arguments now appear to rely on "automatic processing within the GUI" (i.e. Swingby) for enablement of the claimed limitations. (Paper #4, page 29, line 1) As previously cited above, the examiner maintains that essential material and information critical to the operation of the claimed invention relating to the Swingby program (i.e. prior art GUI) has not been disclosed in the specification. Applicant's admission that the Swingby program was enhanced to ultimately realize the STK Astrogator module further buttresses this position.

Applicant's amendment to the specification has added voluminous amounts of technical information (18 pages and 5 figures) in an apparent attempt to cure the deficiencies of the specification. In general, applicant's amendment appears to be an improper attempt at a continuation-in-part (CIP).

Accordingly, the examiner maintains the 112(1) rejection.

Regarding applicant's response to 112(2) rejection: The examiner withdraws the 112(2) rejection in view of applicant's arguments and amendment filed 26 February 2004 (paper # 4)

Regarding applicant's response to 102(b) rejections: Applicant's argue that the rejection in view of Ellis et al is merit-less because it does consider the distinction between simulation and mission planning. The examiner first asserts that the independent claim limitations make absolutely no distinction between mission planning and simulation. Second, it is very well known, and often practiced in the art, to use

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*simulation systems in mission planning. The military, for example, has long used aircraft flight simulators for mission planning purposes. Third, applicants have specifically claimed limitation including "running simulations for each of the established profiles" in the independent claims, not mission planning. In further response to applicant's argument that prior art does not teach mission planning, a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to a process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458, 459 (CCPA 1963).*

The examiner therefor asserts that the Ellis et al teaches all of the elements of the claimed limitations of the present invention either expressly or inherently as cited in the previous rejection. Accordingly, the examiner maintains the 102(b) rejection.

Regarding applicant's response to 102(e) rejections: Applicants have again argued that the prior art (MARC) teaches simulation and not mission planning. The examiner traverses these arguments using the same reasoning as previously cited above. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., solve for how long the user should apply the thrust) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from

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the specification are not read into the claims. See In re Van Geuns, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Accordingly, the examiner maintains the 102(e) rejection.

Information Disclosure Statement

3. *The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered. For example, the specification makes reference to "Satellite Tool Kit (STK)", and "Astogator" which appear to contain information critical to the operation of the claimed invention that has not been disclosed. Hence, these references have not been considered. The incorporation of essential material in the specification by reference to a foreign application or patent, or to a publication is improper. Applicant is required to amend the disclosure to include the material incorporated by reference. The amendment must be accompanied by an affidavit or declaration executed by the applicant, or a practitioner representing the applicant, stating that the amendatory material consists of the same material incorporated by reference in the referencing application. See In re Hawkins, 486 F.2d 569, 179 USPQ 157 (CCPA 1973); In re Hawkins, 486 F.2d 579, 179 USPQ 163 (CCPA 1973); and In re Hawkins, 486 F.2d 577, 179 USPQ 167 (CCPA 1973).*

The specification also makes reference to "The prior art" including a GUI for individual profiling (see specification page 2, line 7), but no prior art has been cited and no proper IDS on PTO form 1449 has been submitted.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. ***Claims 1-9 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.***

The claimed invention is disclosed to be a system for sequentially profiling and solving problems in space mission analysis by allowing an analyst to solve profiles (and sub-profile solutions) for space mission planning. However, the specification is completely silent on the specifics of how the system solves problems in space mission analysis. Neither the specification, nor the claims, disclose what the space mission problems are, how the problems are solved by the system, what is specifically profiled, or how it is sequentially profiled. The specification makes reference to a GUI panel allowing an analyst to initiate processes such as, specifying profiles and controls, running profiles, nesting profile sets, and defining goals (see page 6, line 10 – page 8,

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line 15) but does not specifically teach how the claimed invention actually realizes these processes.

While the specification makes reference to the "Satellite Tool Kit (STK)", and "Astogator" programs, it gives no information on how the system actually "solves" space mission problems, or the profiles or sub-profiles, sufficient to allow one skilled in the art to make and/or use the invention. In general, the specification reads as a "wish list" of features that could be incorporated into the claimed invention, but provides little information on specifically how these features are realized. Dependent claims inherit this defect.

While the specification for claimed invention is delinquent in the areas cited previously under 35 U.S.C. 112 rejections, the examiner has made prior art rejections based on the limited scope of the information contained in the specification and claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

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The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

5. *Claims 1-9 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by U.S. Patent 6,048,366 issued to Ellis et al.*

Independent claims 1, 4, and 7 are drawn to:

Method, system and code for profiling and solving space mission problems by:

Creating mission analysis

Sequence to simulate problem to be solved in space mission

Selecting control variables to checked

Identifying result parameters representing solution

Establishing sub-problem profiles for solved problem

Running profile simulations to provide solution

Regarding independent claims 1, 4, and 7: *Ellis discloses satellite (spacecraft) simulator used for mission rehearsals (planning), development and testing (analysis), anomaly isolation (problems to be solved), and telemetry data streams. Ellis also discloses the generation of spacecraft position, flight dynamics, attitude information, and incorporates the use of the commercially available Satellite Tool Kit from Analytic Graphics Inc.. The simulator disclosed by Ellis allows the user to identify and select parameters and control variables via a command sequencer module and create a simulated mission based on various satellite orbit types and mission profiles. (Abstract,*

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Summary of Invention, CL1-L39, CL3-L15, 55-67, CL5-L1-7, 35-58, CL6-L35-55, Figs. 4, 5)

Regarding dependent claims 2, 3, 5, 6, 8, and 9: As cited above, Ellis includes features for specifying control variables for particular problems and results to be achieved via the command sequencer module. Ellis obviously inherently incorporates the ability to apply starting points to simulation runs and collect solutions to problems (and sub-problems) to be solved. (CL3-L15, 55-67, CL5-L1-7, 35-58, CL6-L35-55, Figs. 4, 5)

Claims 1-9 are also rejected under 35 U.S.C. 102(a) as being clearly anticipated by “MARC – A System for Simulation and Visualization of Space Mission Scenarios”, T. Stephenson, pp. 14-19, IEEE AES Magazine, June 1989

Regarding independent claims 1, 4, and 7: Stephenson discloses a system (MARC) for modeling the orbital dynamics of spacecraft and for generating a simulated sequence of orbital maneuvers including spacecraft thrust and modeling of celestial objects. The MARC system includes user modeling tools for creating mission scenarios (planning) including orbital paths (profiles), selecting control variables and parameters, viewing results (providing solutions), modeling problems (to be solved), and running the

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simulations. (Abstract, Introduction, page: 14, para. 5, page 15, para. 3-9, page 16, para. 4-8, page 17, para. 2-6, 12, page 18, para 10, Figs. 1-3)

Regarding dependent claims 2, 3, 5, 6, 8, and 9: As cited above, Stephenson includes features for specifying control variables for particular problems and results to be achieved via the MARC user interface (page 18-19). Stephenson obviously inherently incorporates the ability to apply starting points to simulation runs and collect solutions to problems (and sub-problems) to be solved.

Conclusion

6. *Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).*

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, careful consideration should be given prior to applicant's response to this Office Action.

U.S. Patent 5,987,363 issued to Quan et al discloses spacecraft simulation and mission planning.

"A Blackboard System for Planning Space Missions", G. Pearson, ACM 0-89791-320-5/89/0006/0409, ACM 1989 discloses spacecraft simulation and mission planning.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Ferris whose telephone number is 703-305-9670 and whose normal working hours are 8:30am to 5:00pm Monday to Friday.

Any inquiry of a general nature relating to the status of this application should be directed to the group receptionist whose telephone number is 703-305-3900.

The Official Fax Numbers are:

Official (703) 872-9306

Fred Ferris, Patent Examiner
Simulation and Emulation, Art Unit 2128
U.S. Patent and Trademark Office
Crystal Park 2, Room 2A22
Crystal City, Virginia 22202
Phone: (703) 305 - 9670
FAX: (703) 305 - 7240
Fred.Ferris@uspto.gov



KEVIN J. TESKA
SUPERVISORY
PATENT EXAMINER

April 13, 2004